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TITLE: Arc welding appts. with resonance switching circuit - in which the resonance frequency of the circuit is higher than half the switching frequency of the semiconductor switches of the current transformer

INVENTOR: SZCZESNY, M

PATENT-ASSIGNEE: EWM ELEKTROWERK MUENDERSBACH VERW GMBH[EWMEN]

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ABSTRACTED-PUB-NO: DE 4411227A
BASIC-ABSTRACT:

The arc welding appts. comprises an inverter current source with a grid-fed rectifier (1), an intermediate circuit (2), a current transformer (4) switched from the primary side, and a rectifier (5) connected to a welding process (9). Switching of the transformer (4) takes place by means of semiconductor switches (T1,T2) which are electrically conductive over a given switching interval (T). The appts. is characterised by the fact that the transformer (4) is provided with a resonance switching circuit (LR, CR) whose resonance frequency (f) is higher than (1/2T).

The resonance circuit is a current resonance circuit, with switching of the current transformer taking place at time instants with zero current in the resonance circuit. Alternatively, it is a voltage resonance circuit. In this case switching of the transformer takes place at time instants with zero voltage in the resonance circuit. The inductive element (LR) of the resonance circuit is formed by the scatter inductivity of the transformer (4). The resonance circuit can be located on either the primary or the secondary side of the transformer.

USE - In arc welding technology.

ADVANTAGE - Higher switching frequencies in comparison with known equipment are possible without excessive losses.

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EQUIVALENT-ABSTRACTS: